Intensity of Infection by Two Species of the Myxosporean Parasite *Kudoa* and its Distribution in Six Areas of the Flesh of Pacific Hake *(Merluccius productus)*

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INTENSITY OF INFECTION BY TWO SPECIES OF THE MYXOSPOREAN PARASITE *KUDOA* AND ITS DISTRIBUTION IN SIX AREAS OF THE FLESH OF PACIFIC HAKE (*MERLUCCIUS PRODUCTUS*)

by

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ABSTRACT

Whitaker, D. J. 1986. Intensity of infection by two species of the myxosporean parasite Kudoa and its distribution in six areas of the flesh of Pacific hake (Merluccius productus). Can. Data Rep. Fish. Aquat. Sci. 598: 23 p.

Samples of Pacific hake (Merluccius productus) from the west coast of North America were examined for infection with the myxosporean muscle parasite Kudoa. The intensity of infection of K. paniformis and K. thyrsites was quantitatively determined for six areas of each fillet. The intensity data, in terms of the numbers of infected muscle fibers per gram of tissue in each fish area examined, are presented.

RESUME

Whitaker, D. J. 1986. Intensity of infection by two species of the myxosporean parasite Kudoa and its distribution in six areas of the flesh of Pacific hake (Merluccius productus). Can. Data Rep. Fish. Aquat. Sci. 598: 23 p.

Des échantillons de merlu du Pacifique (Merluccius productus) provenant de la côte ouest de l'Amérique du Nord ont fait l'objet d'un examen pour la recherche du parasite myxosporidien musculaire Kudoa. L'intensité de l'infection par K. paniformis et K. thyrsitis a été déterminée quantitativement dans six zones de chaque filet. L'auteur présente les données ainsi obtenues en terme du nombre de fibres musculaires infectées par gramme de tissu dans chacune des zones examinées.

INTRODUCTION

Recent joint projects (Kabata and Whitaker in press, Stehr and Whitaker in press, Stehr in press, and Morado and Sparks in press) between the Canadian Department of Fisheries and Oceans, Fisheries Research Branch and the United States National Marine Fisheries Service (NMFS) have resulted in a better understanding of the relationships between Kudoa infections in Pacific hake and product quality.

As part of that work a large body of data regarding the intensity and distribution of Kudoa infections within the musculature of hake has been collected. These data were analyzed but only reported in a summarized manner (Kabata and Whitaker in press), the volume of these data being beyond the scope of primary journal publication. Intensity of infection data are not usually obtained for Myxosporea because of the large numbers involved and the time required to collect them. Because these data are rare and potentially valuable to other investigators working with myxosporean infections it was deemed important and appropriate to report them in the present format.

MATERIALS AND METHODS

A total of 581 fish was collected (579 were examined) in 37 hauls between July 16 and September 28, 1983. Sampling was undertaken by NMFS personnel. Fig. 1 shows the sampling locations which ranged from 37°18'N (near San Francisco) to 48°54'N (west coast of Vancouver Island). All samples were taken in 30 min bottom trawls at depths of 34-164 fms.

Treatment of the parasitological samples is detailed in Kabata and Whitaker (in press) so only a brief description is presented here. Frozen fish fillets were received from the NMFS headquarters in Seattle and held frozen at the Pacific Biological Station, Nanaimo until examination. At the time of examination the presence or absence of infection and the identity of the infecting species were determined. Small portions of muscle tissue were removed from the fillet, pressed between glass plates, and the number of black and white infected muscle fibers was then counted. After counting, the muscle tissue was weighed and the number of infected fibers per gram of muscle tissue was calculated. Counts were made in six areas of the fillet as described by Kabata and Whitaker (1981). The data were entered and stored in a VAX 11/780 computer.

RESULTS

Table 1 presents the data for each haul, which includes haul number, date, location, depth and distance travelled. Table 2 is a computer print-out of the intensity of infection data by haul number. The fish are arranged in sequence by size. Also recorded is sex of the fish and the type of infection, either as K. paniformis (PAN), K. thyrsites (THY), mixed (MIX), or negative (NEG). The parasite intensity for black (an infection where a host response has been elicited) or white (no host reaction) fibers per gram of tissue is given for each of the six areas of the fillet.

REFERENCES

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TABLE 1. HAUL DATA.

HAUL NO.	DATE (1983)	LAT.	LONG.	DEPTH (FM)	DISTANCE TRAVELLED (NAUTICAL MILES)
12	July 16	37°18'	122°53'	163	2.13
14	17	37°36'	122°59'	70	1.61
24	19	28°29'	123°19'	48	2.17
28	20	39°08'	123°58'	145	1.99
32	21	39°34'	123°53'	66	1.40
40	22	40°21'	124°25'	49	1.59
41	22	40°31'	124°33'	50	1.75
49	24	41°26'	124°17'	44	1.80
50	24	41°27'	124°11'	34	1.93
54	25	41°48'	124°30'	130	1.88
60	26	42°18'	124°28'	40	1.56
65	27	42°40'	124°39'	76	1.75
66	27	42°39'	124°33'	50	1.37
83	31	43°22'	124°28'	55	1.54
84	31	43°22'	124°32'	67	1.46
87	Aug. 1	43°18'	124°42'	120	1.22
93	2	43°29'	124°36'	110	1.50
180	23	46°03'	124°14'	52	1.66
181	23	46°04'	124°11'	47	1.67
182	23	46°03'	124°07'	42	1.59
183	23	46°14'	124°18'	55	1.76
193	25	46°30	124°25'	58	1.78
202	26	46°42'	124°35'	72	1.48
210	27	46°49'	124°25'	42	1.89
219	30	46°59'	124°39'	59	1.56
230	Sept. 1	47°01'	124°44'	68	1.46
241	9	47°09'	124°44'	62	1.41
253	11	48°21'	124°51'	64	1.89
256	13	48°20'	125°00'	114	1.51
267	15	48°27'	125°37'	70	0.83
271	18	48°45'	125°50'	57	1.47
280	19	48°54'	126°18'	76	1.21
312	28	48°11'	125°01'	153	1.49
313	28	48°10'	125°15'	148	1.72

TABLE 2. INTENSITY OF KUDOA INFECTION IN MERLUCCIUS PRODUCTUS.

NOTE: '*****' INDICATES FISH AREA WAS MISSING.

HAUL 12 N=029

HAUL	LEN	SEX	PARA	FISH AREA 01 WHITE	FISH AREA 01 BLACK	FISH AREA 02 WHITE	FISH AREA 02 BLACK	FISH AREA 03 WHITE	FISH AREA 03 BLACK	FISH AREA 04 WHITE	FISH AREA 04 BLACK	FISH AREA 05 WHITE	FISH AREA 05 BLACK	FISH AREA 06 WHITE	FISH AREA 06 BLACK
12	24	F	MIX	99.75	0.00	30.89	1.54	125.97	0.00	64.17	0.93	76.62	0.97	50.00	0.32
12	33	M	NEG												
12	34	F	NEG												
12	34	M	PAN	0.00	0.00	3.17	0.00	1.52	0.00	2.26	0.00	0.00	0.00	0.00	0.00
12	34	M	NEG												
12	35	F	PAN	0.00	0.00	0.00	0.00	0.00	4.10	0.00	2.65	0.00	1.63	0.00	0.00
12	35	M	PAN	0.00	0.00	5.43	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00	0.00
12	35	M	NEG												
12	35	F	NEG												
12	35	M	PAN	0.00	1.62	0.00	5.06	0.00	5.45	0.00	3.17	0.00	2.99	0.00	2.91
12	35	M	NEG												
12	36	M	NEG												
12	36	M	PAN	0.00	0.00	*****	*****	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.00
12	37	F	PAN	15.69	0.39	11.28	3.08	14.97	0.00	6.55	2.62	6.37	1.27	6.58	0.66
12	38	F	PAN	1.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	0.68
12	38	M	NEG												
12	40	F	PAN	7.04	0.00	13.61	0.00	6.49	0.00	12.18	0.00	13.23	0.00	4.43	0.00
12	42	M	NEG												
12	45	M	MIX	7.74	1.94	13.37	1.16	1.08	1.08	5.82	0.53	2.22	1.67	1.94	1.29
12	45	M	PAN	1.69	0.42	2.45	1.23	2.27	0.00	2.03	0.00	1.55	1.16	3.03	0.51
12	45	M	PAN	172.06	48.99	156.12	59.69	144.19	26.98	125.38	46.92	121.20	46.29	122.70	46.63
12	46	M	MIX	119.24	1.58	122.28	2.07	100.00	0.93	117.17	0.00	95.13	0.75	71.68	1.33
12	47	F	MIX	108.24	0.72	87.26	2.83	103.76	2.15	68.88	0.41	106.35	1.59	67.12	1.83
12	47	F	PAN	117.37	0.39	73.33	1.43	74.75	0.00	29.44	0.28	72.86	0.00	40.17	
12	48	F	MIX	48.15	1.85	50.00	4.76	46.86	1.14	38.61	0.80	32.32	2.36	38.26	1.01
12	49	F	MIX	35.06	0.00	19.48	0.00	32.16	0.00	30.19	0.00	22.22	0.00	24.43	0.00
12	50	M	MIX	14.53	25.68	28.14	19.60	7.41	21.81	6.44	21.03	11.11	29.22	9.12	19.71
12	53	M	MIX	0.00	2.89	0.00	5.22	0.00	6.09	0.00	3.43	0.00	3.68	0.00	5.91
12	77	F	PAN	256.09	5.25	524.05	13.92	242.58	7.14	354.67	8.00	252.60	8.26	236.32	10.38

HAUL 14 N=009

HAUL	LEN	SEX	PARA	FISH AREA 01 WHITE	FISH AREA 01 BLACK	FISH AREA 02 WHITE	FISH AREA 02 BLACK	FISH AREA 03 WHITE	FISH AREA 03 BLACK	FISH AREA 04 WHITE	FISH AREA 04 BLACK	FISH AREA 05 WHITE	FISH AREA 05 BLACK	FISH AREA 06 WHITE	FISH AREA 06 BLACK
14	23	U	NEG												
14	25	U	NEG												
14	25	U	NEG												
14	25	U	NEG												

TABLE 2 (CONT'D)

14	25	U	NEG
14	26	U	NEG
14	26	U	NEG
14	26	U	NEG
14	27	U	NEG

HAUL 24 N=037

HAUL	LEN	SEX	PARA	FISH AREA 01 WHITE	FISH AREA 01 BLACK	FISH AREA 02 WHITE	FISH AREA 02 BLACK	FISH AREA 03 WHITE	FISH AREA 03 BLACK	FISH AREA 04 WHITE	FISH AREA 04 BLACK	FISH AREA 05 WHITE	FISH AREA 05 BLACK	FISH AREA 06 WHITE	FISH AREA 06 BLACK
24	12	F	NEG												
24	12	M	MIX	0.39	0.00	0.00	0.28	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
24	13	M	NEG												
24	13	M	NEG												
24	23	M	NEG												
24	24	F	NEG												
24	25	F	NEG												
24	35	F	PAN	0.86	0.00	4.17	0.83	1.15	0.00	1.91	0.00	0.43	0.00	1.44	0.00
24	35	M	NEG												
24	46	M	NEG												
24	47	U	PAN	148.05	26.17	168.06	32.64	122.42	30.91	168.97	46.90	143.59	43.59	139.32	27.18
24	47	F	THY	0.46	21.10	3.81	14.29	0.44	12.89	0.00	11.11	0.00	10.85	0.00	5.61
24	47	F	THY	0.00	0.72	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00
24	48	M	PAN	96.91	0.00	6.30	0.84	92.62	0.82	18.96	2.23	23.85	0.77	25.42	1.69
24	48	F	MIX	15.79	8.86	15.33	6.51	10.00	3.70	9.49	6.10	15.28	6.02	12.10	4.84
24	48	F	MIX	12.62	0.95	19.51	4.27	11.95	0.68	11.51	0.00	14.94	0.41	11.56	0.89
24	49	M	MIX	81.82	1.04	94.53	7.96	71.67	1.13	35.28	6.13	32.62	1.42	30.03	2.64
24	49	M	MIX	29.49	78.11	48.84	88.95	50.97	40.34	42.79	55.90	52.10	28.74	64.00	7.00
24	49	M	MIX	34.15	0.30	44.44	9.20	25.00	1.79	22.15	3.69	18.70	0.85	31.19	2.25
24	49	F	MIX	19.54	94.46	0.00	54.58	4.38	65.66	0.00	34.98	1.98	111.55	0.00	97.62
24	50	F	MIX	56.65	2.22	36.91	2.15	36.67	1.85	35.51	3.27	28.09	2.47	17.88	0.99
24	50	M	MIX	309.88	149.01	100.75	435.82	143.40	216.98	35.93	350.90	121.30	214.20	13.33	381.54
24	51	F	MIX	161.15	14.39	141.29	19.35	93.91	15.65	72.32	8.04	126.53	6.63	97.86	3.74
24	52	M	MIX	303.11	40.47	313.19	19.23	204.90	20.00	155.86	11.72	169.47	11.50	246.20	27.72
24	53	F	MIX	104.39	44.20	52.04	40.00	85.92	35.21	55.40	32.10	105.29	37.89	100.00	21.99
24	54	F	PAN	15.22	2.17	2.94	0.37	6.75	1.30	1.48	1.48	0.29	0.57	0.52	0.52
24	56	M	PAN	73.99	36.15	1.37	116.84	58.31	23.20	2.02	71.68	24.03	63.31	8.71	58.71
24	56	F	NEG												
24	58	M	MIX	275.33	19.41	249.82	25.27	198.18	14.91	162.99	14.12	249.22	17.19	196.06	18.72
24	58	F	MIX	941.37	8.84	897.71	89.31	667.35	24.40	642.47	56.85	935.00	20.71	621.59	30.68
24	60	F	PAN	19.14	6.55	29.91	6.70	34.51	3.10	13.25	4.97	20.63	2.45	40.47	2.72
24	61	F	PAN	36.91	63.59	29.86	38.39	27.90	47.24	9.76	28.11	17.43	26.30	15.06	18.92
24	62	F	PAN	26.60	3.70	43.46	9.89	37.72	1.80	37.04	3.17	26.18	2.55	20.95	1.35
24	62	F	MIX	72.17	5.96	67.05	4.92	49.26	3.43	39.88	0.58	48.08	1.37	53.03	1.45
24	63	F	NEG												
24	66	F	PAN	112.73	10.08	76.14	28.42	86.44	8.51	56.14	5.01	55.91	7.26	64.29	6.80
24	76	F	THY	1.62	0.49	2.03	0.29	2.33	1.00	1.16	1.73	0.00	1.59	0.57	0.00

TABLE 2 (CONT'D)

HAUL 28 N=006

HAUL	LEN	SEX	PARA	FISH AREA 01 WHITE	FISH AREA 01 BLACK	FISH AREA 02 WHITE	FISH AREA 02 BLACK	FISH AREA 03 WHITE	FISH AREA 03 BLACK	FISH AREA 04 WHITE	FISH AREA 04 BLACK	FISH AREA 05 WHITE	FISH AREA 05 BLACK	FISH AREA 06 WHITE	FISH AREA 06 BLACK
28	34	M	PAN	111.04	0.00	139.53	0.00	139.67	0.00	116.23	0.00	61.11	0.00	63.46	0.00
28	35	M	NEG												
28	36	F	NEG												
28	37	F	NEG												
28	38	F	NEG												
28	39	F	NEG												

HAUL 32 N=040

HAUL	LEN	SEX	PARA	FISH AREA 01 WHITE	FISH AREA 01 BLACK	FISH AREA 02 WHITE	FISH AREA 02 BLACK	FISH AREA 03 WHITE	FISH AREA 03 BLACK	FISH AREA 04 WHITE	FISH AREA 04 BLACK	FISH AREA 05 WHITE	FISH AREA 05 BLACK	FISH AREA 06 WHITE	FISH AREA 06 BLACK
32	35	F	PAN	3.00	2.58	0.57	1.14	0.73	0.00	0.00	0.00	0.00	1.84	0.00	0.41
32	36	F	NEG												
32	36	F	PAN	1.42	0.24	1.21	0.00	0.90	0.00	0.40	0.00	0.00	0.00	0.00	0.00
32	37	M	NEG												
32	37	M	THY	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.84
32	37	M	PAN	3.02	0.00	0.00	0.00	1.15	0.00	0.92	0.46	0.29	0.00	0.40	0.00
32	38	F	NEG												
32	38	M	MIX	5.44	0.00	8.00	0.00	7.99	0.00	5.23	0.00	8.30	0.00	12.20	0.00
32	38	M	NEG												
32	38	F	NEG												
32	39	F	PAN	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32	40	M	PAN	89.47	0.00	132.17	0.35	126.58	0.42	90.80	0.89	109.76	0.00	83.50	0.33
32	41	F	MIX	5.71	13.33	0.52	13.47	12.00	9.14	24.14	7.47	6.04	3.40	15.71	3.57
32	42	M	PAN	175.18	0.00	219.17	1.55	185.99	0.00	136.58	0.00	141.99	0.00	159.92	0.00
32	43	F	MIX	40.70	0.00	73.96	1.56	39.93	0.69	46.73	0.93	28.29	0.98	41.13	0.43
32	44	M	PAN	99.67	1.32	90.68	1.10	69.72	0.00	69.25	0.62	59.55	0.32	46.05	0.01
32	45	M	PAN	40.94	7.25	9.46	0.32	31.22	3.62	4.45	0.81	11.96	0.48	11.46	0.79
32	45	M	MIX	70.20	1.81	73.13	1.36	50.00	1.28	40.34	3.79	9.76	0.91	29.91	1.28
32	46	F	PAN	53.29	5.02	32.86	3.18	61.13	2.14	29.79	2.39	70.77	0.70	54.35	2.48
32	48	M	PAN	6.74	0.22	10.86	0.00	7.08	0.22	9.09	0.70	7.51	0.54	7.91	0.63
32	48	F	MIX	88.67	0.24	100.37	0.73	48.79	0.24	37.62	1.57	31.71	0.00	24.22	0.00
32	49	F	PAN	33.48	0.00	18.95	0.00	17.24	0.00	16.78	0.00	20.78	0.00	25.18	0.00
32	50	M	PAN	67.90	185.80	57.60	313.82	82.22	217.14	73.60	144.88	97.61	60.16	140.61	91.88
32	50	F	PAN	119.38	3.37	119.05	12.12	140.50	4.98	89.96	5.79	141.20	2.78	84.66	1.28
32	50	M	MIX	289.45	40.63	260.71	101.79	220.88	36.36	218.18	51.38	119.78	28.94	86.62	26.06
32	50	M	MIX	77.72	27.58	28.28	26.77	8.30	49.78	5.45	22.18	3.78	38.24	0.00	18.48
32	51	M	MIX	10.76	9.7	11.03	8.97	12.08	8.74	12.30	9.15	8.63	5.36	13.51	7.47
32	51	M	THY	0.00	0.66	0.25	1.26	0.37	0.74	0.27	1.64	0.00	0.73	0.00	1.03
32	52	F	PAN	7.28	7.73	16.26	7.61	5.30	12.29	20.82	12.24	4.37	7.98	2.84	10.43
32	52	F	MIX	179.76	0.30	144.48	7.14	183.22	1.37	162.92	0.42	215.19	1.77	137.76	1.02
32	52	M	MIX	77.26	3.01	103.72	0.47	65.04	3.72	71.13	0.69	53.09	0.97	74.27	0.41

TABLE 2 (CONT'D)

32	53	M	MIX	3.19	14.07	0.00	13.99	1.69	5.54	0.82	6.28	0.65	5.63	0.65	5.52
32	54	F	THY	1.06	1.06	0.24	2.63	0.29	2.30	0.00	0.63	*****	*****	*****	*****
32	55	F	PAN	4.35	4.99	17.57	6.22	4.86	3.44	4.62	4.14	11.73	2.47	7.44	2.79
32	58	F	PAN	5.81	0.00	4.38	0.00	1.60	0.00	0.34	0.00	1.31	0.00	2.54	0.00
32	60	F	PAN	15.74	1.80	28.30	2.70	17.02	1.91	19.38	2.81	11.56	0.87	9.33	0.67
32	61	F	PAN	28.50	15.89	14.99	13.27	27.80	10.75	25.17	14.14	20.17	8.24	18.45	12.20
32	63	F	MIX	210.47	2.36	232.05	7.12	190.19	1.63	153.33	2.12	294.19	0.83	240.76	1.73
32	65	F	MIX	35.62	1.52	28.92	3.59	18.00	1.22	20.69	2.71	11.16	3.19	13.70	4.33
32	66	F	MIX	64.97	25.27	103.56	37.15	47.77	24.32	38.40	23.48	39.61	14.67	40.22	10.19

HAUL 33 N=002

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
33	71	F	THY	0.00	0.19	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33	78	F	MIX	6.47	0.34	6.83	0.55	4.78	0.18	4.64	0.20	8.22	0.00	3.23	0.00

HAUL 40 N=024

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
40	37	M	PAN	0.30	0.30	2.35	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.40	0.00
40	39	F	PAN	44.85	0.84	80.65	2.51	36.63	0.00	63.83	2.55	35.47	0.31	20.38	1.27
40	41	M	MIX	127.18	4.03	163.30	14.89	76.12	4.66	102.83	12.74	72.92	0.89	77.78	4.55
40	43	F	PAN	10.92	1.24	26.00	3.00	5.37	1.13	18.67	1.24	3.96	0.33	10.00	0.43
40	45	F	PAN	1.09	0.22	0.00	0.00	0.00	0.00	0.86	0.29	0.29	0.58	0.76	0.00
40	46	M	NEG												
40	46	M	NEG												
40	47	F	PAN	0.53	4.38	2.42	5.76	0.63	5.88	0.22	4.37	0.23	2.50	0.93	2.34
40	47	M	MIX	37.13	6.73	9.35	7.88	24.72	3.61	16.54	7.31	9.32	4.11	5.82	3.27
40	47	F	MIX	2.42	22.31	9.42	26.81	3.03	25.76	2.65	28.57	1.45	20.06	11.85	14.81
40	49	F	MIX	137.16	9.29	161.50	24.00	149.12	8.77	149.30	12.21	130.08	6.41	140.24	7.69
40	49	M	MIX	39.41	21.76	8.87	16.31	56.87	14.12	13.75	14.87	124.28	29.71	87.91	32.68
40	50	M	THY	0.81	5.12	0.00	5.31	0.63	1.58	0.36	2.14	0.30	3.28	0.00	1.94
40	51	M	THY	0.00	3.27	0.00	5.07	0.00	2.81	0.42	5.51	0.00	1.99	0.00	4.95
40	51	M	MIX	69.82	5.18	52.53	10.60	58.61	4.97	73.98	6.10	63.58	1.45	92.89	2.37
40	52	M	PAN	106.86	2.11	72.03	4.21	73.15	0.78	59.67	1.31	52.16	2.78	36.09	2.51
40	54	F	THY	0.00	7.38	0.00	6.49	0.00	4.28	0.00	7.21	0.00	3.13	0.00	4.57
40	54	M	MIX	148.94	19.58	123.83	23.83	126.23	13.11	103.50	14.34	112.45	4.15	124.34	13.48
40	55	F	MIX	45.54	4.78	20.39	4.53	36.31	4.14	7.25	5.07	28.13	3.44	22.49	4.42
40	56	F	MIX	34.15	4.27	47.66	10.42	33.85	7.18	33.63	6.73	27.61	5.00	31.76	5.86
40	56	F	MIX	6.59	46.83	6.43	67.84	3.84	54.44	7.39	63.05	5.69	72.91	3.43	51.14
40	57	F	PAN	179.67	0.54	207.53	0.36	176.73	0.00	129.77	1.94	161.46	1.04	178.90	0.32
40	62	M	PAN	9.76	0.00	17.98	1.69	9.90	1.02	13.72	0.72	8.73	0.26	15.35	0.00
40	62	M	PAN	208.22	14.38	243.57	26.43	165.63	11.88	*****	*****	154.18	13.62	*****	*****

TABLE 2 (CONT'D)

HAUL 41 N=008

HAUL	LEN	SEX	PARA	FISH AREA 01 WHITE	FISH AREA 01 BLACK	FISH AREA 02 WHITE	FISH AREA 02 BLACK	FISH AREA 03 WHITE	FISH AREA 03 BLACK	FISH AREA 04 WHITE	FISH AREA 04 BLACK	FISH AREA 05 WHITE	FISH AREA 05 BLACK	FISH AREA 06 WHITE	FISH AREA 06 BLACK
41	36	F	NEG												
41	36	M	NEG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41	37	M	NEG												
41	37	F	PAN	1.64	0.00	2.44	0.00	0.54	0.00	0.93	0.00	0.00	0.00	0.00	0.00
41	37	F	PAN	0.00	0.00	*****	*****	0.00	0.45	*****	*****	0.00	0.00	*****	*****
41	37	M	THY	0.00	3.29	0.00	1.53	0.00	0.00	0.00	1.05	0.00	0.49	0.00	1.85
41	37	F	NEG												
41	37	M	NEG												

HAUL 49 N=040

HAUL	LEN	SEX	PARA	FISH AREA 01 WHITE	FISH AREA 01 BLACK	FISH AREA 02 WHITE	FISH AREA 02 BLACK	FISH AREA 03 WHITE	FISH AREA 03 BLACK	FISH AREA 04 WHITE	FISH AREA 04 BLACK	FISH AREA 05 WHITE	FISH AREA 05 BLACK	FISH AREA 06 WHITE	FISH AREA 06 BLACK
49	36	F	PAN	13.46	0.00	2.04	0.00	4.35	0.00	4.49	0.00	7.77	0.00	8.33	0.00
49	36	F	NEG												
49	36	M	NEG												
49	36	M	PAN	546.05	3.29	451.75	0.00	508.87	0.81	328.85	1.28	481.72	4.30	338.93	3.05
49	36	F	THY	1.27	0.64	0.00	0.00	0.61	0.00	0.00	0.52	0.00	0.00	0.00	0.00
49	37	F	MIX	28.27	0.00	26.09	10.14	22.84	0.00	21.56	0.60	17.96	1.80	13.58	2.47
49	38	F	PAN	14.72	1.73	2.70	1.62	22.50	3.75	6.45	1.61	17.61	1.14	12.03	1.27
49	38	M	NEG												
49	39	F	MIX	81.01	23.42	38.10	26.98	47.18	23.24	142.77	19.28	31.76	4.73	19.47	9.73
49	40	M	PAN	40.44	0.55	44.36	0.00	39.29	0.00	10.73	0.56	23.98	0.00	19.35	0.00
49	41	M	THY	0.00	2.65	0.00	8.75	0.00	3.36	0.00	2.61	0.00	4.23	0.00	3.00
49	42	F	PAN	3.25	0.32	3.25	3.90	2.35	0.94	1.94	4.26	0.80	0.80	0.00	0.45
49	44	M	PAN	1.70	0.00	5.88	0.00	4.94	0.00	2.77	0.00	1.47	0.00	1.78	0.00
49	44	F	MIX	9.49	19.34	4.23	28.04	6.58	20.99	6.38	13.48	1.46	13.50	4.10	12.30
49	45	F	MIX	86.88	0.45	103.85	10.58	74.24	0.51	79.11	2.53	50.47	1.87	50.91	0.61
49	45	F	MIX	190.00	20.77	205.68	55.46	153.89	32.22	118.11	37.86	203.29	30.92	178.07	12.30
49	46	F	MIX	73.23	0.92	77.42	2.15	57.84	1.31	71.98	0.86	35.67	0.58	42.35	0.71
49	46	M	MIX	245.83	8.01	159.30	13.57	123.46	8.46	105.20	4.83	118.42	7.89	166.86	8.00
49	47	M	MIX	3.89	17.71	9.69	19.77	1.36	17.93	1.63	11.44	0.23	15.08	1.75	14.33
49	48	F	PAN	32.82	3.07	40.99	5.41	40.18	1.79	34.74	3.55	27.47	2.20	33.78	3.15
49	48	F	MIX	30.75	0.50	63.33	0.95	34.34	0.75	27.14	0.00	34.32	0.66	*****	*****
49	48	M	PAN	90.37	0.00	*****	*****	83.07	0.00	*****	*****	87.12	0.00	*****	*****
49	48	F	MIX	0.62	5.90	0.00	3.96	1.07	6.42	0.38	5.77	0.61	11.52	0.47	3.26
49	49	M	THY	1.81	9.95	2.36	7.87	0.39	8.14	0.00	3.20	0.00	3.67	0.31	3.70
49	50	M	PAN	8.01	0.64	*****	*****	6.96	0.43	*****	*****	7.64	1.04	*****	*****
49	50	M	MIX	114.90	3.64	0.70	6.99	72.08	4.17	7.76	2.59	61.15	1.15	22.06	1.42
49	50	M	THY	0.43	2.61	1.92	26.92	0.00	2.33	0.00	7.25	0.00	8.94	0.96	3.37
49	50	M	PAN	0.93	3.09	0.00	7.61	0.54	2.72	1.30	2.61	0.00	4.06	0.00	4.26
49	50	F	NEG												
49	51	F	MIX	14.85	16.17	23.88	26.37	11.67	10.67	13.26	15.47	5.88	11.18	9.55	14.33

TABLE 2 (CONT'D)

49	51	F	THY	2.47	0.82	1.38	0.46	2.06	1.37	1.44	0.48	0.00	1.63	0.38	1.13
49	52	M	MIX	306.83	26.51	288.11	39.86	227.69	14.15	259.39	21.84	246.29	18.78	212.84	9.73
49	52	M	MIX	160.58	17.15	189.86	20.95	167.81	15.02	242.19	19.53	196.43	13.49	168.82	13.98
49	56	F	MIX	21.87	17.94	7.89	31.91	16.08	15.08	10.69	19.81	9.97	15.54	9.63	13.66
49	57	F	MIX	24.41	0.00	17.61	0.00	15.15	0.67	11.34	0.00	8.63	0.00	8.33	0.00
49	58	M	MIX	2.79	1.86	6.33	0.63	2.46	0.35	1.59	0.00	0.54	1.89	1.76	0.59
49	60	F	THY	0.51	5.56	0.00	8.25	0.00	6.80	0.00	9.14	0.00	9.23	0.00	15.12
49	62	F	THY	0.34	1.03	0.00	1.36	0.35	0.70	0.46	0.46	0.00	0.32	0.00	0.98
49	63	F	PAN	1.82	7.60	*****	*****	1.10	6.34	*****	*****	4.65	9.77	*****	*****
49	67	F	PAN	1.94	3.39	1.22	6.10	1.19	1.19	0.68	3.41	0.51	5.32	0.35	6.62

HAUL 50 N=002

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
50	61	F	PAN	191.15	19.66	170.96	60.66	193.87	22.26	126.10	33.90	137.06	34.12	93.38	23.03
50	64	F	MIX	830.17	7.26	882.35	11.03	519.53	6.05	506.29	6.92	738.39	4.46	405.51	7.87

HAUL 54 N=003

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
54	77	F	MIX	110.83	5.00	162.86	2.45	139.75	8.45	102.77	10.03	106.69	5.78	118.83	12.01
54	79	F	PAN	232.21	1.79	243.10	1.26	236.75	0.30	231.36	4.66	300.48	3.37	252.71	2.33
54	80	F	PAN	168.25	40.28	140.40	41.08	143.85	38.55	74.73	49.11	112.80	20.07	90.60	11.65

HAUL 60 N=031

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
60	34	M	PAN	40.77	44.62	*****	*****	12.58	43.05	5.93	44.92	7.26	39.52	16.54	22.05
60	36	M	NEG												
60	36	M	THY	2.78	0.00	0.34	0.68	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00
60	36	F	MIX	8.10	23.59	4.76	17.99	3.70	19.14	1.57	11.81	1.01	12.06	2.07	5.39
60	37	F	NEG												
60	37	M	MIX	10.98	0.00	10.93	0.00	5.70	0.00	3.85	0.64	0.98	0.49	1.99	0.50
60	37	M	NEG												
60	38	F	PAN	0.99	0.00	0.00	0.37	0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.00
60	38	F	NEG												
60	39	F	NEG												
60	40	F	THY	2.47	0.00	*****	*****	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.00
60	41	F	PAN	0.00	0.00	1.32	0.66	0.00	0.00	0.00	0.73	0.61	0.00	0.00	0.00
60	41	F	PAN	0.30	0.00	0.00	0.00	4.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE 2 (CONT'D)

60	45	M	MIX	40.99	34.78	13.43	57.41	17.49	31.68	4.95	31.08	2.14	34.11	0.44	20.35
60	45	M	PAN	64.17	11.81	21.95	7.72	45.12	4.38	29.58	3.33	21.64	4.10	84.55	5.45
60	45	M	PAN	10.95	10.45	7.20	4.00	10.00	2.67	2.56	4.10	7.69	0.00	4.08	6.80
60	45	F	MIX	13.64	0.00	21.92	0.00	11.54	0.00	10.66	0.51	13.84	0.00	22.31	0.00
60	47	F	PAN	2.05	0.82	5.52	0.69	6.11	0.44	3.73	1.24	2.26	0.00	1.45	0.48
60	48	M	MIX	59.89	10.44	48.09	6.11	63.75	2.50	34.68	0.00	44.91	2.31	16.75	2.62
60	49	M	THY	0.00	4.61	0.00	1.43	0.00	2.13	0.00	6.97	0.00	3.46	0.00	6.21
60	50	M	MIX	4.56	32.98	1.59	38.10	1.41	31.10	4.22	16.38	1.10	27.84	0.95	26.27
60	50	M	PAN	98.73	54.78	79.88	245.56	88.03	90.85	66.82	131.31	127.43	82.30	43.67	44.30
60	51	F	MIX	8.88	1.27	3.26	8.84	0.39	3.10	1.70	2.38	0.97	2.91	2.33	1.40
60	52	F	PAN	6.09	30.19	5.80	52.90	8.15	61.85	3.85	30.00	6.12	45.26	16.83	32.04
60	52	F	THY	3.40	5.83	0.00	4.74	0.79	1.98	0.00	6.18	0.41	4.08	0.00	2.02
60	53	M	THY	3.02	1.81	*****	*****	0.98	0.49	2.14	1.79	0.00	4.35	2.78	2.43
60	53	F	MIX	48.28	16.26	54.15	24.91	47.53	17.28	56.94	12.92	36.33	30.86	28.95	6.14
60	53	M	PAN	372.67	9.32	163.47	9.58	341.25	7.50	50.18	12.00	101.98	8.42	160.87	3.62
60	54	F	THY	1.78	2.07	0.65	1.30	0.92	0.92	0.40	1.20	0.90	1.80	1.72	1.72
60	57	M	MIX	27.00	8.54	16.95	5.08	6.47	7.21	3.65	2.92	2.78	4.72	4.53	2.88
60	61	F	PAN	509.15	30.72	647.95	78.36	508.02	29.41	441.21	100.61	466.78	38.52	361.35	17.18

HAUL 65 N=011

HAUL	LEN	SEX	PARA	FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
				WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
65	36	M	PAN	9.43	0.27	6.57	0.25	10.12	0.30	4.20	0.49	2.45	0.00	0.00	1.23
65	37	M	NEG												
65	38	M	NEG												
65	39	M	PAN	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.91	0.34	0.00	0.00	0.00
65	41	F	NEG												
65	47	F	PAN	1.34	0.00	0.63	0.00	0.93	0.00	0.00	0.00	0.75	0.00	1.13	0.00
65	50	F	PAN	28.45	181.77	1.26	22.01	26.42	138.02	5.74	40.18	41.25	177.43	5.38	108.60
65	52	F	PAN	5.87	2.01	7.36	3.55	3.56	1.33	9.70	0.93	4.50	1.17	4.01	1.28
65	53	F	NEG												
65	60	F	PAN	13.15	44.40	19.61	58.04	11.59	22.67	14.60	21.53	11.80	26.69	8.31	12.96
65	61	F	PAN	0.17	3.30	1.45	3.27	0.40	3.01	1.28	2.81	1.95	2.43	4.17	4.17

HAUL 66 N=022

HAUL	LEN	SEX	PARA	FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
				WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
66	35	F	NEG												
66	35	M	NEG												
66	36	F	THY	0.31	3.10	0.00	4.65	0.00	2.40	0.00	3.88	0.00	3.25	0.00	4.37
66	37	F	PAN	0.00	0.22	0.00	0.00	0.00	0.84	0.51	0.00	0.00	0.00	0.00	0.00

TABLE 2 (CONT'D)

66	38	F	NEG										
66	38	F	PAN	0.36	0.36	0.51	1.53	0.74	0.74	0.00	1.74	0.28	1.14	0.24	0.72
66	39	F	NEG										
66	41	F	NEG										
66	41	M	NEG										
66	46	F	PAN	114.73	0.57	124.54	5.52	44.14	0.39	35.35	0.64	41.37	1.49	31.62	0.74
66	47	M	MIX	48.55	0.54	45.11	0.86	9.20	0.00	21.98	0.22	11.35	0.00	10.51	0.27
66	48	F	THY	0.41	2.85	0.82	8.16	0.22	3.33	2.40	5.11	0.00	7.34	0.00	4.78
66	48	M	PAN	38.50	0.23	38.44	0.00	27.85	0.00	28.47	0.24	36.16	0.65	23.28	0.00
66	49	M	PAN	42.25	182.54	12.66	110.06	24.32	94.89	21.08	59.07	65.00	32.50	92.73	32.73
66	50	M	PAN	5.69	0.00	8.06	0.60	6.68	0.18	8.88	0.00	7.08	0.00	8.00	0.00
66	51	U	MIX	1.84	11.22	2.48	17.38	0.47	3.89	1.31	5.07	0.74	5.91	3.45	8.43
66	51	F	PAN	222.09	38.96	226.67	33.73	184.66	17.46	173.05	8.98	150.77	13.59	205.54	14.15
66	51	M	MIX	26.30	30.57	19.10	50.56	19.03	23.89	31.76	35.98	8.02	27.59	13.58	25.83
66	51	M	PAN	0.96	0.00	5.18	0.00	1.61	0.00	3.14	0.00	2.00	0.00	5.09	0.00
66	52	M	MIX	0.86	0.17	3.79	0.58	1.43	0.00	0.68	0.00	0.61	0.00	0.96	0.00
66	53	M	THY	0.59	0.39	0.63	1.58	0.00	0.87	0.00	1.43	0.00	0.82	0.29	2.31
66	55	M	THY	0.17	3.87	0.00	2.00	0.00	1.63	0.00	1.57	0.29	0.58	0.23	0.91

HAUL 83 N=008

HAUL	LEN	SEX	PARA	FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
				WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
83	51	M	MIX	8.80	40.10	1.89	32.61	6.78	44.17	4.37	29.51	2.35	37.78	5.09	32.17
83	51	M	MIX	5.36	28.87	1.67	20.67	7.69	25.23	1.39	7.48	1.68	12.32	1.19	12.17
83	52	F	MIX	20.37	14.75	5.05	13.80	11.48	13.73	5.65	6.64	5.17	5.54	4.44	7.66
83	52	F	MIX	787.03	357.30	772.00	479.00	630.91	244.85	502.63	270.39	732.23	317.36	629.61	252.63
83	55	F	MIX	86.48	9.01	38.11	28.32	77.47	12.04	48.33	7.00	60.20	9.03	51.86	9.17
83	55	M	PAN	237.94	10.29	232.26	18.43	181.66	19.53	138.80	8.74	169.14	14.20	139.94	14.08
83	59	F	MIX	0.00	1.61	4.66	8.05	2.29	4.30	0.98	2.68	2.04	2.72	1.86	2.48
83	71	F	MIX	47.58	1.68	49.85	2.11	38.60	0.70	33.33	0.59	19.86	0.72	52.06	0.75

HAUL 84 N=030

HAUL	LEN	SEX	PARA	FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
				WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
84	35	M	NEG												
84	35	F	NEG												
84	36	M	PAN	11.40	7.46	*****	*****	3.83	3.35	4.31	3.45	2.64	2.64	4.41	0.49
84	37	M	NEG												
84	37	M	PAN	1.20	0.00	*****	*****	1.27	0.63	*****	*****	1.47	0.00	*****	*****
84	37	F	PAN	0.82	0.00	0.00	0.93	0.00	0.00	0.53	0.53	0.00	0.00	0.00	0.00
84	37	F	THY	0.00	0.41	0.00	3.65	0.00	0.47	0.00	0.00	0.00	0.78	0.00	0.00
84	37	F	NEG												
84	38	F	THY	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.38	0.00	0.00	0.00	0.00

TABLE 2 (CONT'D)

84	39	M	THY	0.38	0.38	0.43	0.00	0.00	0.45	0.00	0.00	0.00	0.84	0.00	0.44
84	40	F	THY	0.00	0.93	0.00	2.23	0.00	0.95	0.00	0.67	0.00	1.28	0.00	0.77
84	40	F	NEG												
84	40	F	THY	0.85	0.28	0.47	0.47	0.78	1.56	0.00	0.40	0.00	2.02	0.00	1.33
84	41	M	NEG												
84	41	M	NEG												
84	42	M	PAN	1.71	5.98	0.00	2.56	1.16	1.74	1.73	4.62	0.00	9.27	0.00	3.19
84	43	M	PAN	17.51	11.11	44.30	39.87	39.90	8.81	9.55	15.92	27.31	3.78	37.02	3.87
84	45	M	THY	0.72	0.36	*****	*****	0.00	0.45	0.33	0.33	0.00	1.70	0.00	0.00
84	47	M	MIX	49.11	1.42	35.78	0.98	46.44	1.26	12.38	2.38	28.63	2.49	10.00	1.20
84	47	F	NEG												
84	49	F	THY	4.33	4.69	*****	*****	1.02	1.52	2.48	3.31	1.25	2.49	1.59	3.57
84	50	M	MIX	22.47	0.32	10.08	2.52	10.06	0.29	14.57	0.00	4.65	0.47	12.83	0.38
84	50	F	MIX	35.02	6.40	13.96	4.15	14.96	1.97	0.52	2.09	9.62	2.09	4.84	3.23
84	54	F	NEG												
84	55	F	PAN	13.84	7.91	9.91	11.79	8.65	4.50	5.10	5.88	12.20	3.05	20.59	5.46
84	57	F	MIX	3.55	11.15	0.58	11.63	13.59	14.70	5.26	9.11	24.43	12.22	14.82	8.54
84	59	F	MIX	19.68	1.43	21.83	3.17	17.32	1.71	15.93	2.35	12.32	0.95	13.28	0.55
84	60	F	MIX	6.15	1.82	4.58	4.93	6.08	2.76	5.50	2.09	4.13	0.59	2.73	0.50
84	63	F	MIX	0.41	2.06	1.70	3.40	0.22	1.09	1.65	0.82	0.00	1.69	0.29	1.16
84	67	F	PAN	3.44	2.29	2.42	6.06	1.54	2.85	1.17	3.98	4.04	0.40	2.65	0.88

HAUL 87 N=001

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
87	68	F	MIX	8.77	0.00	11.38	0.00	9.49	0.00	3.61	0.00	9.00	0.00	2.72	0.00

HAUL 93 N=002

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
93	68	F	PAN	0.00	5.31	1.42	12.81	0.25	3.55	1.09	5.45	0.25	6.80	0.00	6.27
93	70	F	PAN	38.08	0.21	28.57	0.60	25.39	0.00	20.74	0.80	24.35	0.00	16.61	0.00

HAUL 96 N=001

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
96	19	F	NEG												

TABLE 2 (CONT'D)

HAUL 149 N=034

HAUL	LEN	SEX	PARA	FISH AREA 01 WHITE	FISH AREA 01 BLACK	FISH AREA 02 WHITE	FISH AREA 02 BLACK	FISH AREA 03 WHITE	FISH AREA 03 BLACK	FISH AREA 04 WHITE	FISH AREA 04 BLACK	FISH AREA 05 WHITE	FISH AREA 05 BLACK	FISH AREA 06 WHITE	FISH AREA 06 BLACK
149	36	F	PAN	2.67	0.67	4.17	2.50	2.78	0.56	2.19	0.00	2.17	0.00	2.02	2.02
149	37	F	THY	0.00	8.04	0.00	7.88	0.00	5.60	0.00	5.45	0.00	5.21	0.00	7.43
149	37	M	NEG												
149	37	M	NEG												
149	37	M	NEG												
149	38	F	THY	0.00	1.23	0.00	10.40	0.00	0.90	0.00	1.50	0.00	1.54	0.00	3.96
149	38	F	NEG												
149	38	M	THY	2.08	5.56	0.00	13.66	0.90	0.45	1.12	7.82	0.00	2.11	0.00	3.68
149	39	F	PAN	5.99	0.00	5.05	0.46	4.07	0.00	0.54	0.00	6.72	0.00	2.29	0.00
149	39	M	THY	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00
149	39	F	THY	0.00	7.69	0.00	11.57	0.00	3.16	0.00	4.36	0.00	1.34	0.00	2.70
149	39	M	PAN	14.66	0.00	12.63	0.53	7.95	0.57	10.36	0.00	14.67	0.00	6.41	0.00
149	40	M	THY	8.40	0.76	1.05	0.53	4.84	0.00	0.63	0.00	0.59	0.59	0.50	0.00
149	40	M	PAN	8.76	0.00	9.71	0.00	7.65	0.00	13.18	0.00	10.99	0.52	10.73	0.00
149	41	M	THY	1.22	4.07	0.00	5.19	0.00	2.81	0.00	1.52	0.00	2.86	0.00	3.61
149	42	F	PAN	95.12	1.46	88.89	4.09	82.88	0.68	43.56	2.48	63.80	0.00	50.55	0.00
149	44	M	PAN	118.49	0.00	36.09	0.00	46.63	0.00	16.56	0.00	31.11	0.00	16.95	0.00
149	44	F	PAN	25.56	16.67	2.29	49.54	17.93	6.21	4.23	25.82	27.17	4.89	17.41	9.95
149	44	M	PAN	166.41	17.97	136.09	48.12	127.56	10.26	91.35	11.89	85.19	1.85	129.57	3.48
149	44	F	NEG												
149	44	F	MIX	35.26	0.64	9.50	4.50	8.89	2.22	6.19	2.38	3.85	0.85	7.98	2.45
149	47	F	NEG												
149	50	M	THY	2.21	7.35	0.67	6.71	3.25	3.90	1.99	4.48	1.54	2.31	2.11	9.15
149	51	M	THY	0.00	1.54	0.00	6.09	0.00	1.07	0.00	3.24	0.00	0.00	0.00	3.82
149	51	M	MIX	36.71	44.30	0.00	34.92	35.80	17.61	4.19	38.22	18.11	18.11	5.26	31.58
149	52	M	MIX	303.66	75.61	243.83	172.84	301.08	64.86	246.11	116.77	160.53	32.71	203.77	42.14
149	52	M	THY	0.00	13.74	0.00	7.73	2.99	15.57	2.33	14.88	3.88	13.11	0.00	27.65
149	54	F	MIX	0.00	2.00	0.00	2.14	0.59	1.76	1.52	0.00	2.14	0.53	2.27	1.14
149	54	F	PAN	2.81	0.00	1.26	0.84	0.85	0.00	2.25	0.37	1.73	0.00	1.15	0.00
149	54	F	MIX	52.87	236.21	79.08	332.03	51.91	142.62	28.25	206.21	28.57	64.00	42.86	148.05
149	55	F	MIX	6.79	49.29	13.89	67.22	9.76	49.76	38.24	25.88	24.41	12.21	19.38	28.13
149	55	F	PAN	98.82	65.59	95.45	109.09	104.08	26.87	53.68	67.53	77.82	39.47	77.14	33.33
149	61	F	MIX	41.54	10.77	10.81	37.84	24.64	9.66	5.64	12.03	14.81	7.82	8.17	8.65
149	63	F	MIX	7.22	24.23	0.44	34.07	12.08	28.33	0.93	44.86	15.10	24.83	7.79	14.29

HAUL 169 N=032

HAUL	LEN	SEX	PARA	FISH AREA 01 WHITE	FISH AREA 01 BLACK	FISH AREA 02 WHITE	FISH AREA 02 BLACK	FISH AREA 03 WHITE	FISH AREA 03 BLACK	FISH AREA 04 WHITE	FISH AREA 04 BLACK	FISH AREA 05 WHITE	FISH AREA 05 BLACK	FISH AREA 06 WHITE	FISH AREA 06 BLACK
169	34	F	MIX	128.37	0.00	43.06	4.86	183.33	1.96	75.88	1.76	35.51	0.41	41.95	2.44
169	34	M	THY	0.00	0.58	0.00	4.15	0.00	1.77	0.00	1.83	0.00	1.10	0.00	2.46
169	34	M	NEG												

TABLE 2 (CONT'D)

169	35	F	MIX	21.13	0.70	8.33	0.69	12.27	0.00	5.98	0.00	6.15	0.00	4.19	0.00
169	36	F	NEG												
169	37	M	MIX	80.87	15.30	47.97	34.46	82.07	4.83	23.32	18.39	58.71	5.81	22.92	0.69
169	38	F	NEG												
169	38	M	NEG												
169	38	M	NEG												
169	38	F	NEG												
169	40	F	PAN	0.00	0.00	0.00	0.00	0.98	0.00	0.50	0.00	1.83	0.00	0.54	0.54
169	40	F	THY	0.00	1.04	0.00	0.00	0.00	3.03	0.00	0.87	0.00	0.57	0.00	1.89
169	40	F	THY	0.00	1.00	0.00	1.43	0.00	0.66	0.00	0.33	0.00	0.00	0.00	0.00
169	40	M	THY	0.00	0.54	0.00	1.06	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00
169	40	F	THY	0.00	0.00	0.00	2.65	0.00	0.66	0.00	0.47	0.00	0.50	0.00	0.63
169	42	F	MIX	1.88	0.00	0.45	0.00	2.14	2.14	2.99	0.60	0.00	0.54	0.68	0.68
169	46	M	MIX	35.29	0.00	17.75	0.00	12.89	0.39	19.52	0.00	9.43	0.00	2.56	0.85
169	46	M	NEG												
169	46	M	THY	0.00	1.13	0.00	1.61	0.00	0.46	0.00	0.83	0.00	0.51	0.00	0.43
169	47	F	PAN	35.05	0.00	30.10	1.01	39.41	0.00	27.43	0.00	22.32	0.00	29.17	0.00
169	50	M	THY	0.00	5.71	3.28	2.87	3.54	2.35	0.00	1.36	0.43	0.43	0.45	0.90
169	51	M	MIX	2.79	1.86	2.73	2.73	0.45	1.34	0.82	0.41	1.05	2.09	0.46	1.37
169	52	F	THY	0.52	7.77	0.00	9.94	0.00	6.99	0.00	8.07	0.00	3.43	0.00	5.21
169	53	F	THY	0.00	9.16	0.00	9.29	0.00	7.69	0.00	9.05	0.00	5.57	0.00	6.98
169	53	M	MIX	9.70	0.00	1.80	7.66	0.31	4.70	0.43	2.98	0.37	2.62	2.34	1.34
169	55	F	MIX	118.52	0.53	132.66	1.01	100.32	0.00	125.31	1.63	113.09	0.36	86.92	0.47
169	55	F	MIX	34.10	1.38	49.27	17.07	42.78	3.89	38.12	18.83	35.86	4.78	22.30	9.06
169	56	F	THY	1.55	0.52	0.33	0.66	5.28	0.38	0.32	0.00	0.53	0.00	9.09	1.24
169	57	F	MIX	24.77	25.69	0.45	29.55	2.85	19.51	0.00	12.94	0.00	3.96	0.00	8.26
169	61	F	PAN	43.08	46.15	62.66	60.76	32.98	44.91	31.06	46.42	19.44	36.99	44.49	33.07
169	62	F	THY	0.00	0.72	0.00	2.42	0.00	0.90	0.31	1.56	0.00	0.97	0.00	0.26
169	68	F	MIX	8.94	0.69	9.13	10.43	7.69	1.49	10.38	2.83	4.84	0.97	5.36	0.26

HAUL 180 N=001

HAUL	LEN	SEX	PARA	FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
				WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
180	40	M	MIX	6.96	0.00	3.21	0.00	1.48	0.00	5.75	0.00	4.81	0.00	6.36	0.00

HAUL 181 N=022

HAUL	LEN	SEX	PARA	FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
				WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
181	36	M	THY	1.17	2.34	0.66	4.64	0.00	2.17	0.00	2.00	2.74	1.37	0.00	1.53
181	37	M	NEG												
181	37	F	PAN	7.38	5.74	6.88	1.88	10.39	4.55	6.47	6.03	20.78	1.30	9.03	3.23
181	38	M	NEG												
181	38	M	NEG												

TABLE 2 (CONT'D)

181	39	F	NEG										
181	39	F	NEG										
181	39	F	THY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.38	0.00	0.00	0.00
181	40	M	PAN	0.00	0.61	0.00	0.87	1.09	0.54	0.51	1.01	0.42	0.00	0.00	0.00
181	40	F	PAN	0.00	0.61	1.53	0.00	2.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
181	41	F	THY	1.32	0.00	0.00	0.45	0.00	0.00	0.00	1.46	0.00	0.50	0.00	0.00
181	41	M	NEG												
181	42	F	NEG												
181	42	F	NEG												
181	44	F	THY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00
181	45	F	MIX	3.77	8.96	23.21	4.76	15.84	5.45	8.00	1.33	9.58	3.33	15.03	1.96
181	46	F	MIX	1.43	0.00	0.60	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00
181	49	F	PAN	12.35	21.76	5.91	61.82	69.85	27.64	19.89	59.14	34.55	23.58	22.16	35.14
181	50	F	MIX	18.62	0.53	16.67	0.00	19.15	0.00	17.72	0.00	14.00	0.00	21.58	0.00
181	53	F	THY	0.00	4.50	0.00	11.33	0.00	3.47	0.00	2.65	0.00	2.42	0.00	2.40
181	59	F	PAN	4.82	0.00	11.48	0.48	2.73	0.00	3.91	0.00	1.74	0.00	4.53	0.82
181	59	F	PAN	2.11	0.00	0.00	0.00	0.00	0.00	1.23	0.00	1.11	0.00	2.00	0.00

HAUL 182 N=008

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
182	51	M	PAN	66.07	99.40	83.12	103.25	54.30	58.28	25.88	49.80	48.85	62.21	18.42	12.11
182	52	F	MIX	82.07	2.76	156.52	7.25	104.32	0.00	109.78	4.35	72.22	2.47	70.14	0.69
182	53	M	THY	1.97	4.61	1.41	6.57	1.65	4.96	0.86	2.16	0.92	6.45	0.00	1.92
182	53	F	MIX	6.76	2.42	2.01	6.03	7.29	10.42	1.25	5.33	3.86	3.86	0.71	4.61
182	54	F	MIX	103.27	4.73	159.15	9.86	82.66	1.21	83.41	6.16	73.24	3.76	69.77	3.99
182	55	F	MIX	177.50	3.75	104.44	3.23	110.56	0.00	55.52	1.66	80.66	0.55	65.05	1.94
182	57	F	THY	12.99	7.14	10.76	3.98	11.38	2.40	8.87	2.14	5.75	1.15	5.81	0.65
182	64	F	THY	2.70	5.79	1.22	1.83	3.24	6.02	2.62	3.66	2.68	6.94	5.38	5.38

HAUL 183 N=001

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
183	48	M	THY	0.35	1.73	0.71	0.71	0.48	1.45	0.44	0.44	0.00	0.00	0.00	0.48

HAUL 193 N=034

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
193	34	F	NEG												
193	36	M	NEG												
193	36	M	NEG												

TABLE 2 (CONT'D)

193	36	F	THY	0.74	5.19	0.00	9.33	0.00	12.86	0.00	8.40	0.00	2.49	0.00	9.77
193	37	M	PAN	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193	37	F	NEG												
193	38	F	PAN	0.00	14.09	0.00	17.45	0.00	5.35	0.00	5.13	0.00	12.29	0.00	1.97
193	38	F	PAN	7.95	1.32	4.06	0.51	9.03	0.65	2.02	0.00	1.31	0.00	4.08	0.68
193	39	M	THY	0.00	0.62	0.00	0.79	0.00	0.00	0.00	1.17	0.00	0.00	0.00	1.48
193	39	M	NEG												
193	40	M	THY	0.00	0.00	0.00	0.49	0.00	2.05	0.00	0.00	0.00	0.00	0.00	0.00
193	40	M	NEG												
193	40	F	THY	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.58	0.00	0.41	0.00	1.14
193	40	F	MIX	0.00	3.33	0.00	9.60	1.03	5.13	0.00	8.37	0.49	6.37	0.00	7.85
193	41	M	THY	0.60	0.60	0.53	0.53	0.00	0.00	0.00	0.89	0.00	0.40	0.00	1.69
193	42	F	THY	2.94	0.00	0.40	0.00	0.60	0.00	0.70	0.35	1.85	0.00	0.00	0.00
193	42	M	NEG												
193	42	M	THY	0.00	3.07	0.00	1.35	0.00	3.27	0.00	2.38	0.00	5.43	0.00	2.06
193	42	F	THY	0.00	4.05	0.00	3.95	0.00	4.02	0.34	3.09	0.00	0.46	0.00	3.24
193	52	M	MIX	33.93	8.93	32.14	9.82	33.13	3.61	18.18	5.84	19.69	1.18	13.20	1.52
193	53	F	MIX	91.77	2.53	58.72	20.35	76.65	4.85	23.44	9.16	39.68	1.59	20.74	6.45
193	53	M	THY	0.00	11.43	0.00	23.95	0.00	8.65	0.00	12.76	0.00	4.15	0.00	19.90
193	54	M	THY	8.20	15.30	2.64	18.94	3.09	17.28	1.26	17.57	0.40	12.05	0.00	9.77
193	54	F	THY	2.43	0.30	*****	*****	0.00	0.42	0.00	0.00	0.00	0.30	0.00	0.00
193	54	F	MIX	7.35	2.65	0.96	3.85	15.21	0.97	6.67	2.67	33.87	0.81	6.76	1.80
193	57	F	MIX	159.85	14.29	341.79	35.07	198.84	15.06	158.10	16.19	156.33	23.33	149.70	16.77
193	60	F	THY	0.36	0.18	1.16	0.00	0.00	0.51	1.09	1.82	0.00	1.31	0.45	0.00
193	60	F	MIX	0.00	8.02	0.00	7.26	0.00	6.12	0.00	2.37	0.00	2.24	0.00	3.65
193	60	F	MIX	3.26	138.04	3.09	118.04	1.79	110.04	2.40	130.77	1.92	40.61	6.19	44.76
193	62	F	MIX	120.38	9.55	81.28	11.82	52.15	4.78	36.23	8.21	55.68	10.99	96.48	10.05
193	63	F	MIX	28.77	6.85	19.16	10.39	43.14	6.86	15.14	5.71	22.29	2.87	19.15	4.26
193	65	F	MIX	15.00	22.08	4.36	18.53	4.00	10.67	2.12	8.22	1.11	2.58	1.69	3.05
193	66	F	MIX	53.54	12.60	75.85	16.60	48.40	11.60	45.34	14.41	34.35	5.22	34.15	9.76
193	68	F	MIX	27.62	41.99	15.49	27.46	4.39	21.93	0.00	11.02	5.35	12.83	2.45	6.12

HAUL 202 N=001

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
202	23	U	THY	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

HAUL 210 N=029

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHIT	LACK	WHITE	BLACK	WHITE	BLACK
210	36	M	NEG												
210	37	M	MIX	0.00	0.98	0.00	1.75	2.50	0.00	0.47	0.00	0.57	1.14	0.00	2.11
210	38	M	THY	0.00	4.08	0.00	6.25	0.00	0.00	0.00	2.08	0.00	0.00	0.00	3.91
210	38	F	NEG												
210	38	M	NEG												

TABLE 2 (CONT'D)

210	39	F	THY	0.41	0.00	0.47	0.47	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00
210	39	F	THY	0.68	0.68	0.00	0.00	0.00	0.63	0.00	0.00	0.69	0.69	0.00	0.55
210	39	M	NEG												
210	39	F	NEG												
210	39	F	NEG												
210	41	M	PAN	0.65	0.00	0.93	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00
210	44	M	NEG												
210	44	F	PAN	225.86	50.86	214.39	163.64	142.29	38.29	173.79	67.59	149.47	11.70	180.49	34.15
210	45	M	MIX	1.67	1.67	0.00	0.55	2.92	0.73	0.00	0.87	0.00	0.58	0.00	4.35
210	46	F	THY	4.62	3.08	0.00	3.60	0.00	1.15	0.00	1.24	0.00	0.00	0.00	1.11
210	48	M	MIX	66.32	1.04	24.70	2.02	35.82	1.49	28.34	2.83	32.46	2.09	26.14	1.70
210	49	F	THY	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00
210	49	M	MIX	62.67	237.33	13.82	316.26	51.43	194.29	14.65	205.10	3.87	143.23	4.47	172.07
210	49	F	MIX	16.92	46.92	6.00	70.00	10.80	26.14	7.69	28.57	10.06	26.63	11.87	26.03
210	50	M	THY	2.93	7.53	1.66	8.29	5.29	4.81	0.84	5.02	0.49	4.39	0.49	4.93
210	50	F	MIX	23.23	0.00	28.21	0.64	34.32	0.00	23.65	4.43	23.15	0.93	17.39	0.00
210	51	M	MIX	17.74	0.81	13.07	2.84	23.47	0.00	16.74	2.26	15.00	0.00	14.21	1.64
210	51	M	MIX	3.02	1.29	7.93	13.41	0.00	6.90	1.99	9.95	0.45	6.31	1.32	5.26
210	52	M	MIX	29.72	37.74	15.95	66.26	9.61	30.13	19.57	27.83	22.47	9.69	20.00	7.89
210	53	M	MIX	90.30	8.58	141.09	13.95	89.05	6.67	109.95	5.21	89.30	4.65	111.44	3.39
210	54	F	MIX	5.67	13.36	1.17	15.20	1.41	14.08	5.03	13.07	1.30	4.35	3.04	8.26
210	55	F	THY	0.30	2.73	0.00	4.55	1.29	1.29	0.31	2.18	0.46	0.46	0.00	0.83
210	55	F	PAN	0.00	5.65	0.00	19.64	0.00	5.03	0.00	12.68	0.00	2.08	0.00	8.37
210	58	F	MIX	8.85	22.40	2.26	27.68	1.80	8.63	2.27	12.73	1.89	6.04	1.14	6.86

HAUL 219 N=003

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
219	21	M	NEG												
219	50	M	THY	3.13	0.00	6.41	1.28	5.65	1.69	3.91	1.95	1.94	1.16	4.92	2.73
219	60	F	THY	1.05	2.62	0.32	5.79	1.32	1.76	0.00	1.38	0.42	0.84	0.00	2.11

HAUL 230 N=005

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
230	47	F	THY	0.00	1.59	0.00	1.20	0.00	0.00	0.00	0.00	0.00	1.20	0.00	1.55
230	64	F	THY	0.00	1.09	0.00	2.35	0.45	1.36	0.35	0.35	0.00	1.68	0.00	2.95
230	66	F	MIX	19.35	1.01	17.82	1.49	17.25	0.00	17.24	0.35	19.05	0.89	17.11	0.88
230	68	F	THY	1.02	7.12	1.15	4.96	0.00	4.58	0.24	5.08	0.64	3.54	0.85	3.38
230	70	F	MIX	20.36	6.79	12.24	15.31	16.31	4.00	5.88	6.72	2.34	0.39	1.95	3.26

TABLE 2 (CONT'D)

HAUL 241 N=026

HAUL	LEN	SEX	PARA	FISH AREA 01 WHITE	FISH AREA 01 BLACK	FISH AREA 02 WHITE	FISH AREA 02 BLACK	FISH AREA 03 WHITE	FISH AREA 03 BLACK	FISH AREA 04 WHITE	FISH AREA 04 BLACK	FISH AREA 05 WHITE	FISH AREA 05 BLACK	FISH AREA 06 WHITE	FISH AREA 06 BLACK
241	18	F	NEG												
241	44	M	MIX	184.72	8.33	226.32	44.74	156.54	16.23	176.92	29.67	108.52	20.00	144.02	30.98
241	46	F	MIX	18.36	1.64	5.11	2.19	6.09	0.51	2.68	0.30	5.15	0.86	8.02	0.00
241	47	M	MIX	43.00	5.00	11.58	12.74	24.38	3.31	11.58	5.79	25.91	0.40	26.90	0.51
241	47	M	THY	8.89	0.00	5.09	0.00	1.71	0.00	2.18	0.00	6.22	0.00	2.11	0.00
241	48	F	MIX	103.88	1.94	88.83	7.82	54.05	1.80	58.72	4.13	47.84	0.93	29.63	1.39
241	48	F	PAN	56.41	0.00	35.27	0.83	41.20	0.00	32.03	0.00	24.37	0.00	26.58	0.90
241	49	M	MIX	121.81	0.00	106.29	6.29	45.74	1.42	23.03	2.96	42.09	2.92	27.08	4.17
241	49	M	MIX	28.88	13.79	28.08	5.48	25.22	20.35	16.93	8.47	7.93	13.66	14.12	5.08
241	49	F	PAN	61.79	0.00	69.15	1.00	61.83	0.41	54.55	0.00	66.67	1.72	50.43	0.87
241	49	F	MIX	12.73	6.36	23.16	13.68	10.96	6.58	13.45	4.04	15.18	3.13	26.29	2.86
241	51	M	THY	0.00	8.00	1.11	11.67	1.10	4.95	0.35	3.18	0.41	6.94	0.00	10.84
241	51	M	MIX	4.30	6.25	12.86	38.57	1.35	18.47	2.21	20.22	1.76	20.59	1.72	14.48
241	51	M	MIX	10.49	8.20	10.13	25.95	16.93	4.72	7.53	12.10	18.33	5.00	21.14	7.05
241	51	F	MIX	0.00	16.18	5.94	22.77	1.05	6.32	13.68	15.38	5.60	18.80	5.80	6.76
241	51	F	MIX	31.22	16.46	20.60	25.32	18.43	12.16	16.05	18.93	19.81	7.23	30.84	18.50
241	53	F	MIX	0.00	2.18	0.00	3.33	0.00	2.64	0.00	2.24	0.00	3.29	0.00	2.55
241	54	M	PAN	39.51	33.13	40.98	42.93	40.07	26.71	18.87	25.73	33.33	21.21	28.83	9.25
241	54	F	THY	0.00	0.89	0.00	1.60	0.00	0.87	0.00	1.96	0.00	1.27	0.00	0.56
241	58	F	PAN	26.54	6.15	23.35	15.23	19.36	5.20	13.29	6.07	16.99	8.88	17.28	1.98
241	58	F	THY	0.77	0.51	0.70	0.70	0.00	0.00	0.00	0.30	0.00	0.28	0.00	0.00
241	60	F	THY	0.36	1.43	0.00	2.14	0.38	1.53	0.00	2.50	0.00	1.05	0.00	1.72
241	61	F	PAN	78.33	294.58	26.38	338.65	76.13	184.68	27.53	267.21	45.38	101.92	33.84	181.31
241	62	F	MIX	1.85	0.00	1.62	0.32	0.71	0.36	1.59	0.27	1.82	0.36	0.64	0.64
241	63	F	MIX	2.82	7.98	5.43	9.95	6.86	5.78	1.28	4.49	0.00	0.27	0.46	5.94
241	65	F	THY	0.00	0.75	0.00	3.01	0.00	0.66	0.35	0.35	0.34	0.69	0.00	1.00

HAUL 253 N=026

HAUL	LEN	SEX	PARA	FISH AREA 01 WHITE	FISH AREA 01 BLACK	FISH AREA 02 WHITE	FISH AREA 02 BLACK	FISH AREA 03 WHITE	FISH AREA 03 BLACK	FISH AREA 04 WHITE	FISH AREA 04 BLACK	FISH AREA 05 WHITE	FISH AREA 05 BLACK	FISH AREA 06 WHITE	FISH AREA 06 BLACK
253	37	M	MIX	0.00	0.49	0.00	1.20	0.00	1.64	0.00	0.78	0.00	0.00	0.00	1.27
253	41	F	THY	0.58	0.58	0.00	0.00	0.50	0.00	0.00	0.56	0.00	0.00	0.00	0.00
253	42	M	THY	2.76	1.38	0.00	1.12	0.53	0.00	0.00	0.00	2.47	0.00	2.19	1.09
253	45	M	MIX	7.93	4.41	0.47	5.19	2.07	3.72	0.37	4.04	4.58	6.11	0.00	6.25

TABLE 2 (CONT'D)

253	46	F	MIX	22.41	0.41	9.14	1.71	15.71	1.90	13.12	1.81	7.82	1.23	11.76	1.96
253	46	F	MIX	76.00	0.00	31.76	2.35	95.41	0.00	117.42	0.00	154.40	0.00	202.92	0.00
253	48	M	THY	0.00	6.44	0.00	10.19	0.00	8.76	0.00	5.94	0.00	7.62	0.00	1.38
253	48	F	PAN	5.19	1.48	3.02	3.52	1.42	1.07	4.64	3.21	0.68	0.34	1.72	1.03
253	49	F	THY	0.00	2.11	2.61	1.30	2.07	1.38	1.71	2.05	2.99	0.00	3.41	0.00
253	49	M	MIX	47.66	0.00	45.34	6.21	32.89	0.44	30.77	3.37	23.72	3.28	21.59	1.89
253	49	M	THY	0.00	0.49	0.00	4.41	0.00	1.56	0.00	3.42	0.00	0.82	0.00	0.87
253	50	F	NEG												
253	50	F	PAN	48.28	0.00	44.14	0.00	28.46	0.00	21.14	0.00	34.58	0.00	28.49	0.00
253	50	M	NEG												
253	51	M	MIX	1.45	2.42	0.52	3.13	0.80	7.60	0.43	1.72	0.53	3.68	0.00	1.75
253	52	M	THY	0.84	12.55	3.88	15.53	0.81	12.50	1.43	9.29	0.00	12.73	0.34	9.22
253	52	F	MIX	28.76	4.72	38.43	7.86	12.50	1.14	22.09	7.36	16.06	0.40	9.63	2.59
253	52	M	PAN	56.35	4.97	53.04	10.00	37.85	3.59	12.89	7.32	26.45	0.41	13.62	3.11
253	52	F	MIX	67.18	47.69	43.58	81.56	47.39	24.78	23.23	70.32	39.81	13.11	28.69	24.05
253	53	M	MIX	25.57	1.15	47.62	8.47	17.85	0.92	13.60	4.41	18.75	1.36	4.78	3.18
253	57	F	PAN	27.35	3.14	5.10	6.12	29.58	2.11	12.82	3.85	27.03	2.70	19.58	3.17
253	60	F	MIX	28.01	14.01	47.95	11.07	31.67	4.27	30.09	6.64	10.26	4.97	34.55	6.98
253	60	F	MIX	261.68	57.94	236.65	72.11	199.29	18.44	202.54	35.59	115.31	16.33	180.08	13.56
253	60	F	MIX	8.55	2.56	6.88	3.44	3.23	1.61	6.50	0.72	3.06	0.31	4.28	1.22
253	61	F	MIX	21.03	33.58	7.02	24.41	12.90	47.47	3.20	33.81	1.69	41.02	9.17	27.52
253	63	F	MIX	30.88	0.49	44.44	4.76	22.39	1.16	16.56	2.87	8.87	0.00	11.03	1.84

HAUL 256 N=008

HAUL	LEN	SEX	PARA	FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
				WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
256	49	M	THY	2.08	0.83	0.34	0.67	0.00	1.08	0.00	1.37	0.00	1.12	0.00	0.00
256	51	F	THY	0.00	4.51	0.00	9.28	0.00	9.29	0.00	11.31	0.00	3.95	0.00	10.71
256	53	F	PAN	51.00	2.81	64.65	7.91	51.46	3.35	56.28	3.46	47.75	5.11	50.34	1.37
256	58	F	THY	1.93	0.00	0.79	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
256	58	F	THY	0.00	0.42	2.01	1.34	0.33	1.64	2.51	0.00	0.34	0.69	0.00	0.82
256	59	F	MIX	0.47	4.65	0.66	4.93	0.00	6.77	0.35	4.58	0.00	7.43	0.00	9.17
256	60	F	PAN	35.23	17.05	37.45	48.21	39.59	18.78	18.60	16.77	36.72	9.04	25.88	11.18
256	63	F	THY	1.42	0.00	0.38	0.00	0.39	0.39	1.13	0.00	0.00	0.00	0.58	0.00

HAUL 267 N=008

HAUL	LEN	SEX	PARA	FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
				WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
267	46	F	THY	0.00	1.30	1.84	1.47	0.41	1.63	0.41	1.63	0.00	0.00	0.43	0.43
267	47	M	THY	0.00	3.78	0.00	4.55	0.00	2.38	0.00	0.61	0.00	0.86	0.68	1.36
267	49	F	THY	0.47	0.95	0.45	0.00	0.87	0.00	0.00	0.87	4.02	0.45	0.51	0.00
267	53	F	MIX	9.13	0.87	23.38	0.00	22.99	0.38	20.00	0.00	24.44	0.00	19.51	0.00

TABLE 2 (CONT'D)

267	53	F	MIX	23.51	0.99	21.95	2.44	16.02	0.78	26.92	2.40	12.87	0.37	20.00	0.00
267	54	F	PAN	443.91	19.13	10.00	1.54	90.00	10.00	6.25	4.17	2.98	3.40	13.16	2.63
267	55	F	MIX	4.52	0.50	1.72	1.29	1.35	1.79	2.75	0.00	2.25	1.35	5.71	0.00
267	55	F	THY	1.45	8.21	0.42	10.59	0.00	6.84	0.00	2.49	0.00	0.70	0.00	0.49

HAUL 271 N=002

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
AUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
271	11	U	NEG												
271	12	U	NEG												

HAUL 280 N=003

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
280	56	F	THY	0.00	0.98	0.00	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.61
280	56	F	MIX	40.57	0.00	27.10	0.00	18.93	0.00	16.51	0.00	15.31	0.00	15.97	0.42
280	61	F	THY	0.00	18.78	0.00	13.66	0.00	8.49	0.00	10.09	0.00	6.75	0.00	10.79

HAUL 312 N=026

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
312	39	M	NEG												
312	39	M	NEG												
312	40	F	PAN	1.55	0.00	2.26	0.00	0.00	0.00	0.93	0.93	1.25	0.63	*****	*****
312	40	F	THY	0.00	0.96	0.00	1.49	0.00	0.34	0.00	1.33	0.00	0.42	0.00	1.25
312	40	F	THY	0.38	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.32	0.00	0.00
312	40	M	THY	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
312	41	F	PAN	23.30	0.97	7.22	0.00	4.38	0.31	5.63	0.63	5.18	0.00	7.84	0.00
312	41	F	THY	0.00	1.16	0.00	0.00	0.00	0.71	0.42	0.42	0.00	1.55	0.00	1.19
312	42	F	THY	0.00	0.50	0.00	1.54	0.00	1.79	0.00	1.21	0.00	0.37	0.00	1.22
312	46	F	PAN	45.32	1.97	58.28	0.61	22.96	1.89	23.32	2.24	20.77	0.97	21.94	0.65
312	47	M	MIX	47.54	0.00	36.56	0.00	23.64	0.00	21.23	0.34	25.00	0.00	26.82	0.00
312	48	M	THY	1.20	0.00	1.23	0.00	0.00	0.00	1.39	0.00	0.44	0.00	0.00	0.00
312	50	U	THY	0.39	0.39	0.52	1.57	1.25	0.00	1.65	0.82	1.46	0.49	1.24	0.00
312	51	F	PAN	28.33	1.02	34.45	0.84	17.60	0.75	11.53	1.02	11.11	0.00	13.79	0.00
312	51	F	MIX	10.78	1.29	5.45	0.78	2.94	0.37	2.74	0.91	3.56	0.00	1.06	1.06

TABLE 2 (CONT'D)

312	54	M	MIX	5.24	3.00	1.26	4.20	5.43	1.71	6.86	0.72	4.33	0.62	6.71	0.64
312	54	F	THY	0.00	1.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
312	56	M	MIX	0.00	17.55	0.72	27.80	0.00	12.27	0.71	22.78	0.00	14.62	0.41	4.48
312	57	F	THY	0.00	4.36	0.33	8.88	0.00	2.11	0.00	2.68	0.00	2.92	0.00	3.57
312	57	F	MIX	1.31	13.44	5.79	7.71	1.91	6.37	4.96	3.72	4.94	0.58	4.62	5.90
312	60	F	THY	0.00	0.77	0.67	2.34	0.77	2.31	0.69	2.07	0.32	0.96	0.33	1.97
312	61	F	MIX	77.35	42.74	3.64	4.55	32.20	18.08	3.23	34.27	36.76	4.35	45.21	22.37
312	61	F	THY	0.54	0.00	0.00	1.64	0.00	3.61	0.00	2.29	0.00	0.00	0.00	0.00
312	61	F	NEG												
312	63	F	MIX	35.08	4.71	34.80	23.35	25.47	3.30	22.31	8.85	15.93	3.98	27.36	5.66
312	71	F	MIX	3.30	12.94	0.76	32.44	2.60	8.51	0.36	16.07	0.00	14.72	1.05	13.63

HAUL 313 N=004

				FISH AREA 01		FISH AREA 02		FISH AREA 03		FISH AREA 04		FISH AREA 05		FISH AREA 06	
HAUL	LEN	SEX	PARA	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK
313	39	F	THY	0.00	0.00	0.58	0.58	0.00	0.40	0.00	0.90	0.00	0.00	0.00	0.00
313	39	F	THY	0.00	1.29	0.00	0.61	0.00	4.09	0.00	0.00	0.00	0.49	0.00	0.95
313	61	F	MIX	25.57	19.32	24.35	35.42	25.13	23.12	13.40	26.12	11.66	6.73	16.78	23.63
313	65	F	MIX	1.87	21.50	1.93	28.57	0.87	13.48	1.08	9.14	0.44	4.42	0.81	11.38

Fig. 1. Sampling locations for Pacific hake (after Kabata and Whitaker, in press).